

Claims

1. Process for preparing crystalline optical elements, wherein structural defects in a crystal blank are classified, characterized in that a homogeneity image of said blank is established showing at least one single structural defect, having a length and width analyzing said single structural defect by measuring homogeneity and determining an RMS-value of said single structural defect in which the first 36 Zernike coefficients are subtracted, thereby obtaining a line scan of said defect and identifying said defect as a peak, defining said peak by its amplitude and halfwidth by means of a fit curve and integrating said peak over the length of said single structural defect of said homogeneity image.
2. Process according to claim 1, characterized in that the ratio of said integrated value of said defect and the overall RMS value of the blank is determined, thereby determining the influence of said single defect on the overall homogeneity of said blank.
3. Process according to claim 1 or 2, characterized in that the crystal blank is a CaF₂ crystal.
4. Optical element obtainable by the process of claims 1-3 characterized in that it has a homogeneity of at least 2 x 10⁻⁸.
5. Use of the process according to claim 1 - 3 for the preparation of lenses, prisms, light conducting rods or optical windows for DUV photolithography, steppers, excimer lasers, computer chips and integrated circuits and electronic equipment containing said computer chips and said integrated circuits.
